

## 7.3 Dividing Polynomials by Monomials

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There are 2 ways to do this:

Model w Algebra Tiles

$$x-2 = \frac{3x^2 - 6x}{3x}$$

← middle  
← top or side

answer for the division

$x-2$

Algebraically

$$\begin{aligned} & \frac{3x^2 - 6x}{3x} \\ &= \frac{3x^2}{3x} - \frac{6x}{3x} \\ &= x - 2 \\ &= \underline{\underline{x-2}} \end{aligned}$$

divide each term by the monomial

Draw what we know  $\rightarrow 3x$  and the  $3x^2 - 6x$ , and fill in top with what fits  $\square + \square \square$  and check signs  $= x-2$

Try these (whichever way):

$$\begin{aligned} \text{a) } \frac{-2x^2 + 4x}{2x} &= \frac{-2x^2}{2x} + \frac{4x}{2x} = -1x + 2 \\ &= -x + 2 \end{aligned}$$

$$\begin{aligned} \text{b) } \frac{8x^2 + 2x}{-2x} &= \frac{8x^2}{-2x} + \frac{2x}{-2x} = -4x + -1 \\ &= -4x - 1 \end{aligned}$$

$$\text{c) } \frac{15x^2 - 12x}{-4x} = \frac{15x^2}{-4x} - \frac{12x}{-4x} = -\frac{15}{4}x + 3$$

$$c) \frac{15x^2 - 12x}{3x} = \frac{15x^2}{3x} - \frac{12x}{3x} = 5x - 4$$

$$d) \frac{16x^3 + 4x^2 - 20x}{2x} = \frac{16x^3}{2x} + \frac{4x^2}{2x} - \frac{20x}{2x}$$

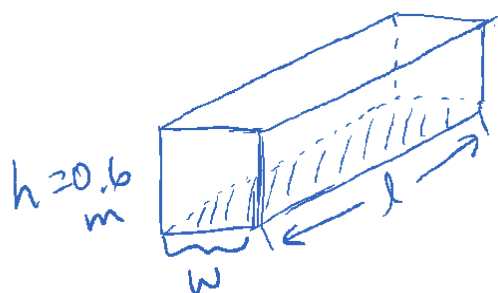
$$= 8x^2 + 2x - 10$$

Word problem pg 276 #11

$$\text{Volume} = 7.5w^2 - 3w$$

$$= \frac{l \cdot w \cdot h}{x}$$

$\frac{\quad}{0.6}$



$$c) \text{Area of base} = \underline{w \cdot l} = \frac{V}{h}$$

$$\frac{7.5w^2 - 3w}{0.6} = \frac{7.5w^2}{0.6} - \frac{3w}{0.6}$$

$$A = 12.5w^2 - 5w$$

$$b) \frac{A}{w} = \frac{l \cancel{w}}{\cancel{w}}$$

$$l = \frac{12.5w^2 - 5w}{w} = \frac{12.5w^2}{w} - \frac{5\cancel{w}}{\cancel{w}}$$

given  $w = 0.6$

$$l = 12.5w - 5$$

$$c) l = 12.5(0.6) - 5$$

$$= \boxed{2.5 \text{ m}}$$

$$c) \quad x = \frac{1}{2} \frac{1}{\omega^2} \frac{1}{\omega^2} \\ = \boxed{2.5 \text{ m}}$$

$$V = 7.5 \omega^2 - 3 \omega \\ = 7.5 (0.6)^2 - 3 (0.6) \\ = \boxed{0.9 \text{ m}^3}$$

Practice pg 275 # 4-10, 12, 13, 15, 18